

Date: Friday, 01/05/2009 9:57:31 AM  
 User: Jean-Luc Menard

## Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: BRACKET ASSEMBLY
Job Number	: 47646		
Estimate Number	: 10291		
P.O. Number	:	Part Number	: D3183044
This Issue	: 01/05/2009 S.O. No. :	Drawing Number	: D3183 REV C1
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: // Type : MACHINED PARTS	Drawing Revision	: C1
Previous Run	: 43485	Material	:
Written By	: <i>[Signature]</i> 09.05.01.	Due Date	: 08/05/2009 Qty: 6 Um: Each
Checked & Approved By	:		
Comment	: Est Rev: Pick: A 04.02.18 New issue KJ/DS Est Rev: B Changed Mat Size 08-06-26 JLM Verified By: EC		

## Additional Product

Job Number: 

Seq. #: Machine Or Operation: Description :

1.0 M174B1500X02250 17-4 SS Bar 1.50 X2.250



Comment: Qty.: 0.4812 f(s)/Unit Total: 2.8873 f(s)  
 Material: 17-4 SS Bar per AMS 5604/5643  
 (M17-4-B1.500x02.250  
 Identify for D3183-4  
 Batch: 41108309 (+1 piece *mmf*)

*mmf 09/05/01*

⑦/6

2.0 BAND SAW BAND SAW



Comment: BAND SAW  
 Cut blanks: (1.500" x 2.250") 5.500" long

*mmf 09/05/01*

⑦/6

3.0 HAAS1 HAAS CNC VERTICAL MACHINING #1



Comment: HAAS CNC VERTICAL MACHINING #1

1-Machine D3183-4 as per Folio FA322 and Dwg D3183  
 Identify as D3183-4

2-Deburr

3-Scribe batch number

*mmf 09/05/05*

*09/05/06* ⑥

4.0 QC2 INSPECT PARTS AS THEY COME OFF MACHINE




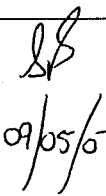
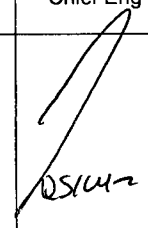
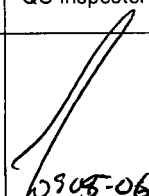
Comment: INSPECT PARTS AS THEY COME OFF MACHINE

*mmf 09/05/05*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
















Part No: D3183-044 PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☐ No ☒ DQA: ☒ Date: 09/05/14

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR: <u>47646</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
09/05/05	3.0	spl got Ø .392 is .390, bearing fit is too loose tool offset.  Re operator error		Scrap and replace	mmf 09/05/05	 09/05/07		 0905-06

NOTE: Date & initial all entries

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services		Drawing Name: BRACKET ASSEMBLY	
Job Number: 47646		Part Number: D3183044	
Job Number:			
Seq. #:	Machine Or Operation:	Description :	
5.0	QC8	SECOND CHECK	
			
Comment: SECOND CHECK		J.L 09/07/05	
6.0	D312121	Bolt	
			
Comment: Qty.: 2.0000 Each(s)/Unit Total : 12.0000 Each(s) Pick: Qty Part Number Description Batch 2 D3121-21 Bolt <u>B46739</u>			
7.0	D3183045	Bearing Assembly	
			
Comment: Qty.: 2.0000 Each(s)/Unit Total : 12.0000 Each(s) Pick: Qty Part Number Description Batch 2 D3183-045 Bearing Ass <u>B47756</u>			
8.0	SMALL FAB 1	SMALL & MEDIUM FAB RESOURCE 1	
			
Comment: SMALL & MEDIUM FAB RESOURCE 1 Assemble D3183-043 as per Dwg D3183.			
9.0	QC5	INSPECT WORK TO CURRENT STEP	
			
Comment: INSPECT WORK TO CURRENT STEP			
10.0	PACKAGING 1	PACKAGING RESOURCE #1	
			
Comment: PACKAGING RESOURCE #1 Identify and Stock Location: <u>ST 236A</u>			
11.0	QC21	FINAL INSPECTION/W/O RELEASE	
			
Comment: FINAL INSPECTION/W/O RELEASE			
Job Completion			
		-mf 09-05-13	

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	47646
<b>Description:</b> Bracket		<b>Part Number:</b>	D3183-4
<b>Inspection Dwg:</b> D3183	<b>Rev:</b> C1	Page 1 of 1	

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
R0.190	+/-0.030	.190	✓			
R0.063	+/-0.010	.063	✓			
0.188	+/-0.010	.189	✓			
0.070	+/-0.010	.068	✓			
0.100	+/-0.010	.104	✓			
Ø0.201 x 0.100	+/-0.010	Ø .206 x .102	✓			
0.183	+/-0.010	.184	✓			
5.32	+/-0.030	5.32	✓			
5.036	+/-0.010	5.035	✓			
2.120	+/-0.010	2.122	✓			
1.290	+/-0.010	1.285	✓			
0.365	+/-0.010	.359	✓			
0.218	+/-0.010	.212	✓			
1.030	+/-0.010	1.030	✓			
1.90	+/-0.030	1.88	✓			
1.012	+/-0.010	1.009	✓			
Ø0.201 x 0.100	+/-0.010	Ø .206 x .103	✓			
0.786	+/-0.010	.782	✓			
Ø0.392	+0.002/-0.000	Ø .394	✓			
R0.19	+/-0.030	R .19	✓			
3.954	+/-0.010	3.949	✓			
0.162	+/-0.010	.164	✓			
R0.19	+/-0.030	R .190	✓			
R0.25	+/-0.030	R .25	✓			
4.26	+/-0.030	4.26	✓			
2.800	+/-0.030	2.82	✓			
Calculated dimension						
0.162	+/-0.010	.164	✓			
0.615	+/-0.010	.613	✓			
0.435	+/-0.010	.440	✓			
0.200	+/-0.010	.206	✓			
0.381	+/-0.010	.381	✓			
0.032	+/-0.010	.032	✓			

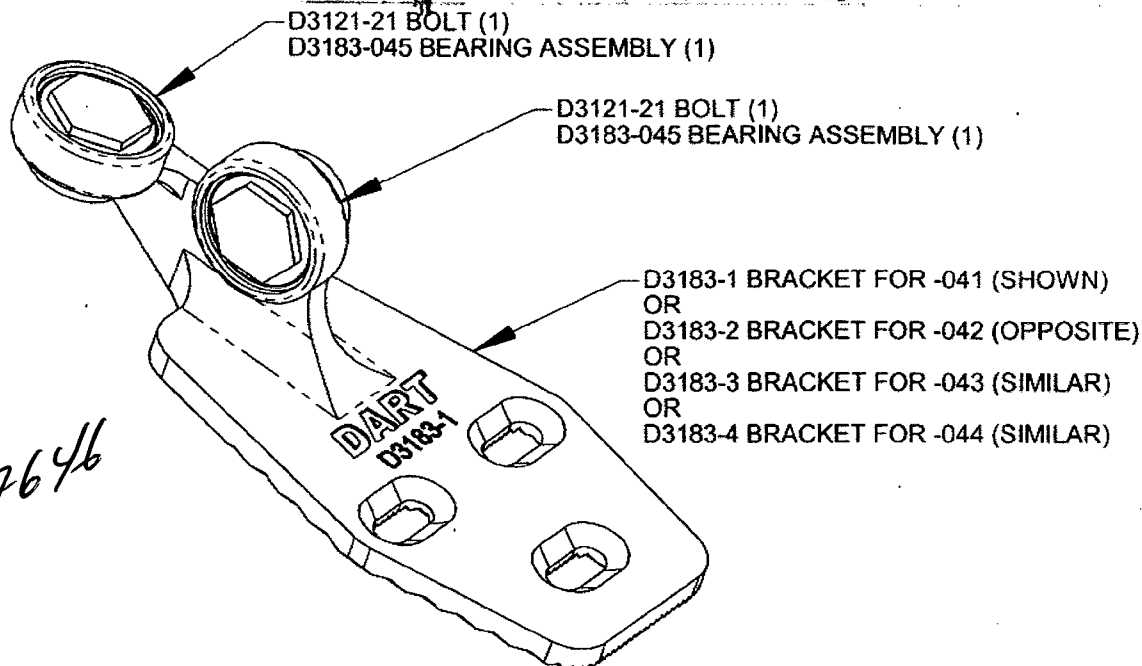
<b>Measured by:</b>	mf	<b>Audited by:</b>	JL	<b>Prototype Approval:</b>	N/A
<b>Date:</b>	09/05/05	<b>Date:</b>	09/05/07	<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	03.11.12	New Issue P/O D3183-044	KJ/RF	
B	04.03.15	Changes as per revision C	KJ/JLM/RF	
C	04.06.15	Dimension 2.800 was 2.080; removed 1.155, 0.36 dimensions	KJ/JLM	
D	06.03.09	Dwg Rev update	KJ/JLM	
E	08.01.16	Dimensions revised	KJ/EC/DD	

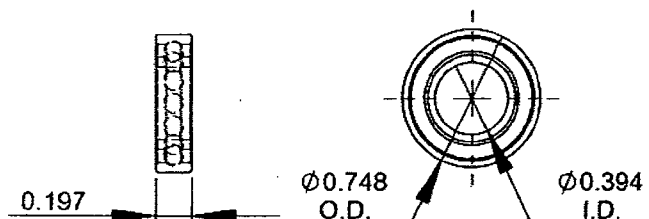


DESIGN #		DRAWN BY CP		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #		APPROVED #		DRAWING NO. D3183	REV. C SHEET 1 OF 4
DATE 04.02.17			TITLE BRACKET ASSEMBLY SCALE 1:1		
A	03.01.24		NEW ISSUE		
B	03.06.17		REMOVE BEARING; 1.012 WS 0.882		
C	04.02.17		ADD -045/-9; 0.182 WAS 0.431		
C1	04.11.09		0.830 WAS 0.850		

RELEASED  
04.03.01

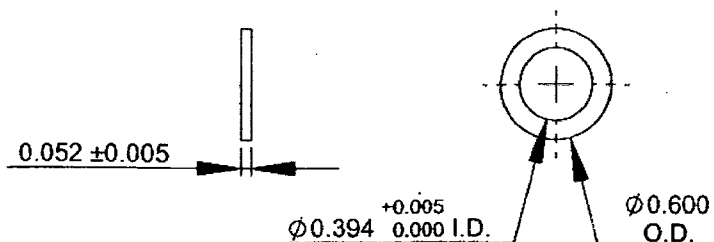


**D3183-041 BRACKET ASSEMBLY (SHOWN)**  
**D3183-042 BRACKET ASSEMBLY (OPPOSITE)**  
**D3183-043 BRACKET ASSEMBLY (SIMILAR)**  
**D3183-044 BRACKET ASSEMBLY (SIMILAR)**



**D3183-5 BEARING:**  
**SPECIFICATION CONTROL DRAWING**

- 1) SINGLE ROW, DEEP GROOVE, CONRAD TYPE, SHIELDED
- 2) POSSIBLE SUPPLIER: NSK P/N 6800ZZ
- 3) ALL DIMENSIONS ARE IN INCHES



**D3183-7 WASHER**

- 1) MATERIAL: AISI 303 ROUND BAR (M303R) ANNEALED
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES

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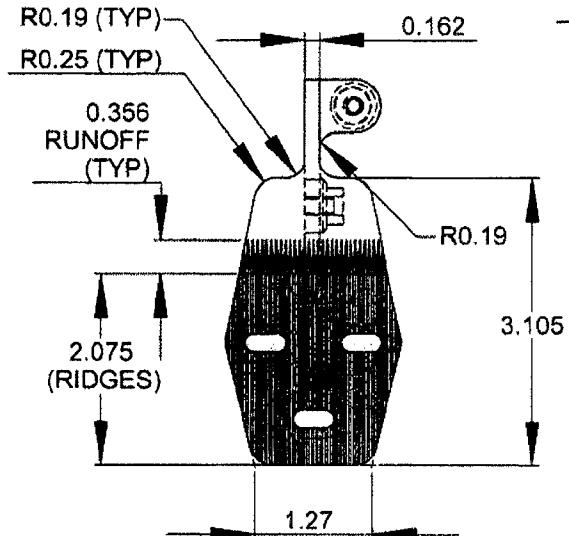
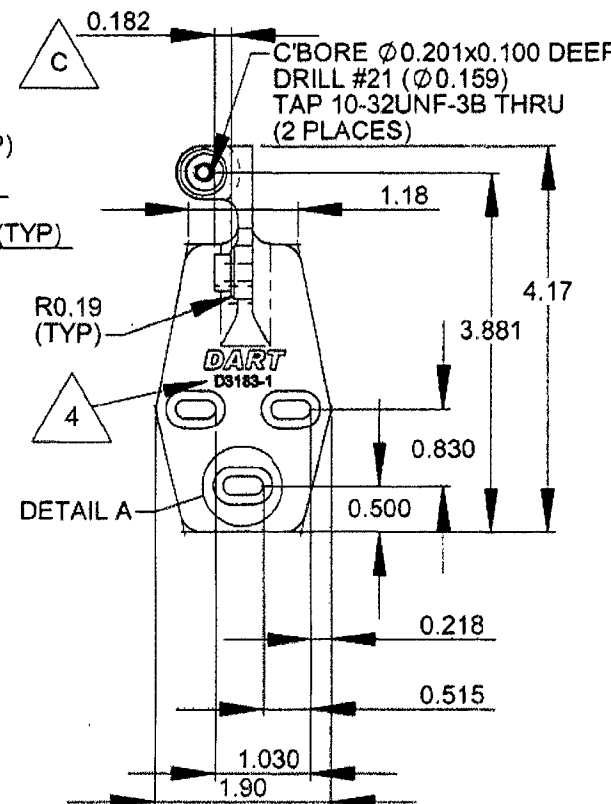
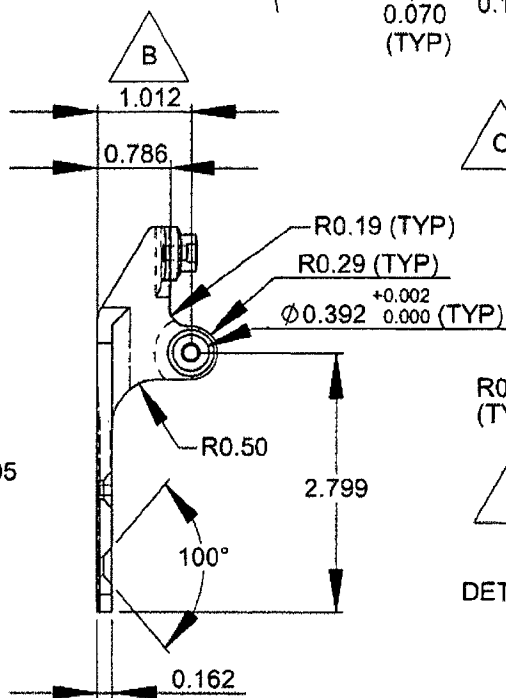
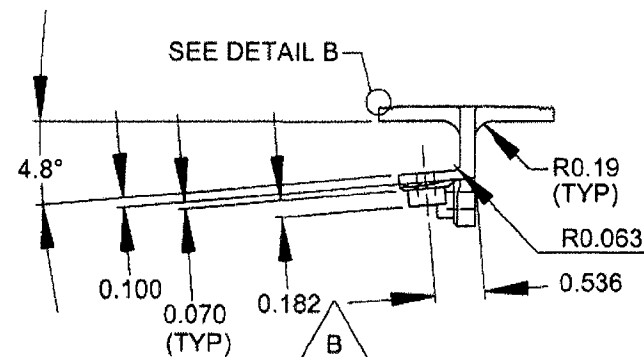
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		HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO.	REV. C
		D3183	SHEET 2 OF 4
DATE		TITLE	SCALE
04.02.17		BRACKET ASSEMBLY	1:2

RELEASED  
04-03-01



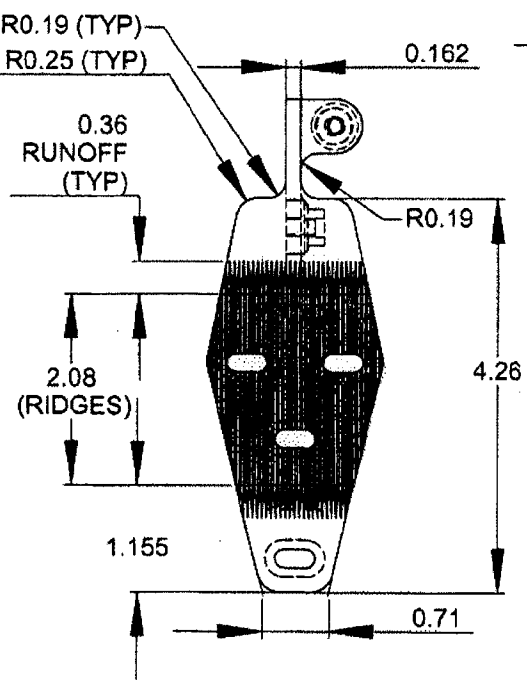
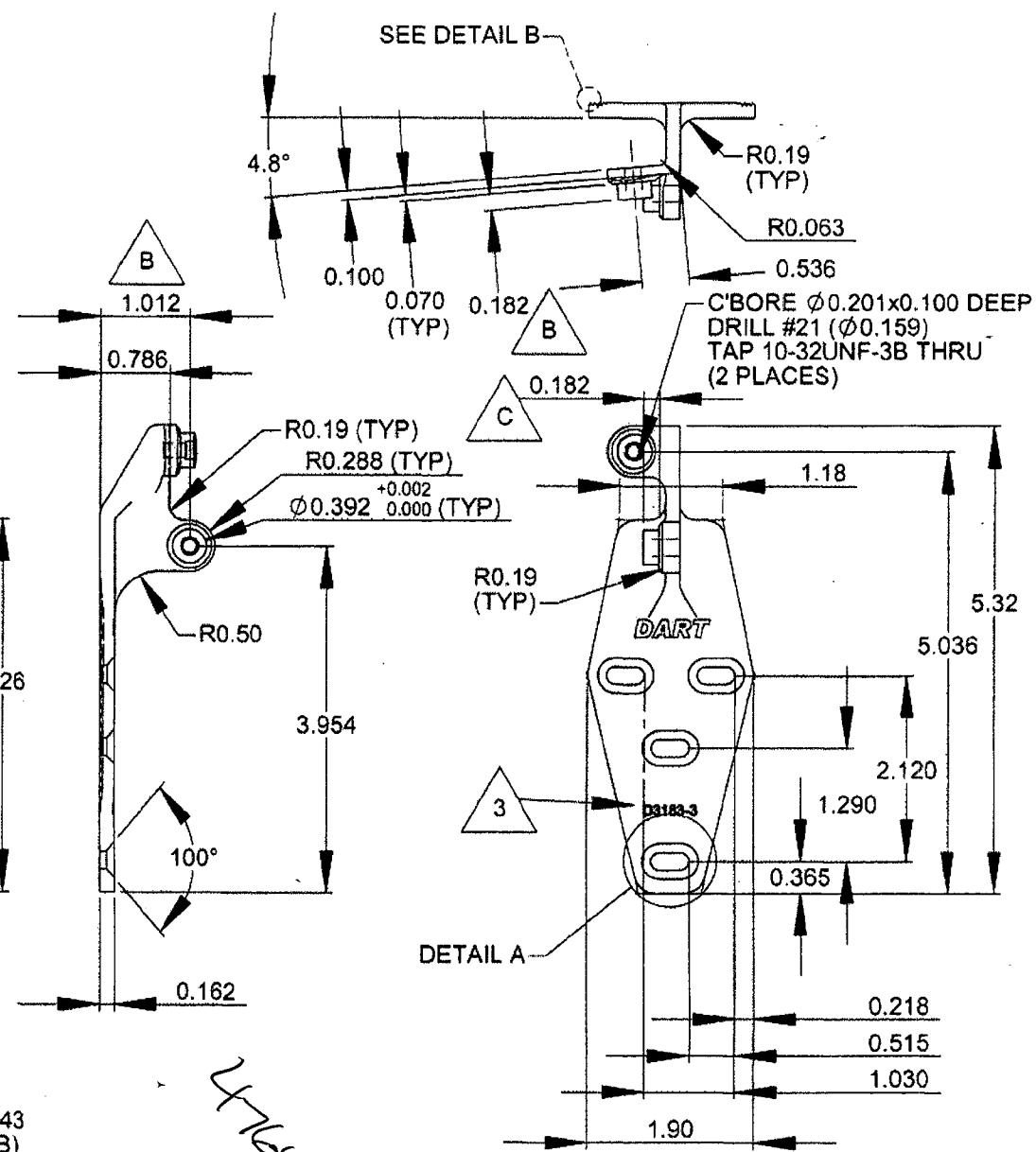
D3183-1 BRACKET SHOWN  
D3183-2 BRACKET OPPOSITE

- 1) D3183-1 CAN BE MADE FROM D3183-3  
D3183-2 CAN BE MADE FROM D3183-4
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643  
(REF DART SPEC. M17-4-B)  
MIN ULTIMATE STRENGTH = 150 ksi  
MIN YIELD STRENGTH = 100 ksi
- 3) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 4) ENGRAVE DART P/N & LOGO AS SHOWN
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

979676



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DATE	04.02.17	DRAWING NO. D3183
TITLE		BRACKET ASSEMBLY
SCALE		1:2
SHEET 3 OF 4		REV. C



D3183-3 BRACKET SHOWN  
(REPLACES BELL P/N 412-030-304-105)  
D3183-4 BRACKET OPPOSITE  
(REPLACES BELL P/N 412-030-304-106)

- 1) MATERIAL: 17-4 SS PER AMS 5604/5643  
(REF DART SPEC. M17-4-B)  
MIN ULTIMATE STRENGTH = 150 ksi  
MIN YIELD STRENGTH = 100 ksi
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 3) ENGRAVE DART P/N & LOGO AS SHOWN
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES

47648

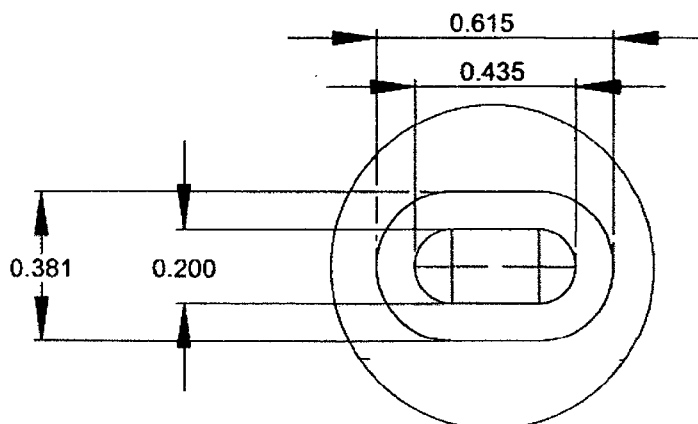
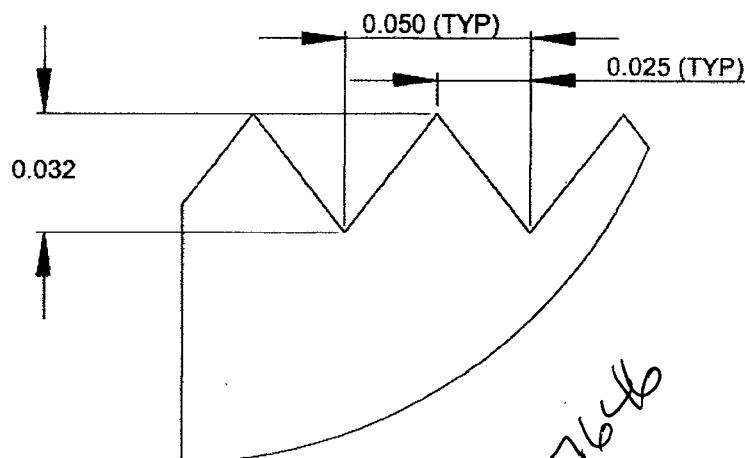
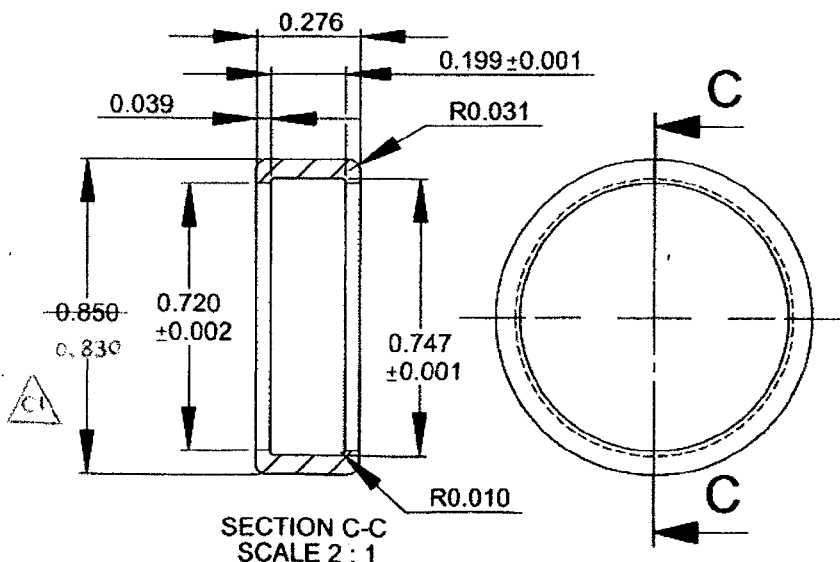
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RELEASED  
04.03.01

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CHECKED #	APPROVED #	DRAWING NO. <b>D3183</b>	REV. C SHEET 4 OF 4
DATE <b>04.02.17</b>		TITLE <b>BRACKET ASSEMBLY</b>	SCALE 1:1

**DETAIL A (2 : 1)****RELEASED**  
04.03.01 #**DETAIL B (20 : 1)****D3183-9 CAP**

- 1) MATERIAL: DELRIN ROD, Ø1.00  
(REF DART SPEC. M-DELRIN-R1.00)
- 2) TOLERANCES ARE PER DART QSI 018  
UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES

**D3183-045 BEARING ASSEMBLY**

- 1) ASSEMBLE D3183-5 BEARING AND  
D3183-9 CAP

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